

# Region 11 Technical Note – Geomorphic Terms

**Date:** January 2009

**Subject:** Geomorphic terms

**Purpose:** Provide standard list of geomorphic terms to use in Region 11

**Procedure:** Use the following list of *Landscape, Landform, Microfeature, and Anthropogenic Feature Terms* defined in the National Soil Survey Handbook (NSSH) Glossary (comprehensive alphabetical and subset lists grouped by Geomorphic Process or other Groupings). These lists are the core of the Geomorphic Description System (Schoeneberger and Wysocki, 2002).

**A) LANDSCAPES** - broad or unique groups or clusters of natural, spatially associated features.

drumlin field	karst
dune field	lake plain (also Landform)
glaciokarst	outwash plain (also Landform)
hills (singular = Landform)	river valley (also Landform)
ice-margin complex	till plain (also Landform)

**B) LANDFORMS** - discrete, natural, individual, earth-surface features mappable at common survey scales.

alluvial fan	foredune
alluvial flat	free face (also Geom. Comp. - Hills)
backswamp	glacial drainage channel
bar	glacial lake (water body)
barchan dune	glacial lake [relict]
beach	ground moraine
beach ridge	head-of-outwash
beach terrace	hill
blowout	hillslope
bluff	ice-contact slope
bog	ice-marginal steam
braided stream	interdrumlin
broad interstream divide	interdune (also Microfeature)
channel	interfluvium (also Geom. Comp. - Hills)
cliff	island
closed depression (also Micro.)	kame
collapsed lake plain	kame moraine
crevasse filling	kame terrace
delta	kettle
depression	knob
disintegration moraine	knoll
drainageway	lake (water body)
drumlin	lakebed [relict]
drumlinoid ridge	lake plain (also Landscape)
dune	lake terrace
end moraine	landslide
escarpment	lateral moraine
esker	loess bluff
fen	loess hill
flat	longshore bar [relict]
flood plain	marsh
flood-plain splay	meander scar
flood-plain step	medial moraine

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monadnock	roche moutonnée
moraine	sand boil
mud flat	scarp
natural levee	scour (mark)
open depression (also Micro.)	seif dune
outwash delta	sinkhole
outwash plain (also Landscape)	slackwater (water body)
outwash terrace	slough (ephemeral water)
overflow stream channel	slough (permanent water)
oxbow	slump
oxbow lake (water body)	strath terrace
oxbow lake (ephemeral)	stream (water body)
paha	stream terrace
parabolic dune	structural bench
patterned ground (also Micro.)	swale
pitted outwash plain	swamp
pitted outwash terrace	terminal moraine
plain (also Landscape)	till-floored lake plain
point bar	till plain (also Landscape)
pothole	transverse dune
pothole lake (water body)	tree-tip mound
ravine	tree-tip pit
recessional moraine	tunnel valley
ridge	tunnel-valley lake (water body)
river (water body)	valley train
river valley	wave-cut platform

**C) MICROFEATURES** - discrete, natural, earth-surface features typically too small to delineate at common survey scales.

closed depression (also Landform)	open depression (also Landform)
gully	patterned ground (see below)
interdune (also Landform)	

**Patterned ground microfeatures** - used in association with the landform "patterned ground".

Periglacial patterned ground microfeatures:

ice wedge polygons

**D) ANTHROPOGENIC FEATURES** - discrete, artificial (human-made or extensively modified), earth-surface features.

artificial collapsed depression	midden
artificial levee	openpit mine
beveled cut	pond (human-made)
borrow pit	quarry
burial mound	railroad bed
cut (road, railroad)	reclaimed land
cutbank	road bed
ditch	sand pit
dredged channel	sanitary landfill
dredge-deposit shoal	scalped area
dredge spoil bank	sewage lagoon
dump	skid trail
fill	spoil bank
filled marshland	spoil pile
floodway	surface mine
gravel pit	tillage features (below)
landfill (see sanitary landfill)	truncated soil
leveled land	urban land
log landing	



## Region 11 Technical Note – Geomorphic Terms

**EOLIAN** - dominantly wind related, erosional or depositional.

### Landscapes:

dune field

### Landforms:

barchan dune  
blowout  
dune  
foredune  
interdune  
loess bluff

loess hill  
paha  
parabolic dune  
seif dune  
transverse dune

### Microfeatures:

interdune (also Landform)

**GLACIAL** - directly related to glaciers; includes glaciofluvial, glaciolacustrine, glaciomarine, and outwash features.

### Landscapes:

drumlin field  
glaciokarst  
hills

ice-margin complex  
outwash plain (also Landform)  
till plain (also Landform)

### Landforms:

collapsed lake plain  
crevasse filling  
disintegration moraine  
drumlin  
drumlinoid ridge  
end moraine  
esker  
glacial drainage channel  
glacial lake [relict]  
glacial lake (water body)  
ground moraine  
head-of-outwash  
ice-contact slope  
ice-marginal stream  
interdrumlin  
kame  
kame moraine  
kame terrace  
kettle

lateral moraine  
medial moraine  
moraine  
outwash delta  
outwash plain (also Landscape)  
outwash terrace  
paha  
pitted outwash plain  
pitted outwash terrace  
pothole  
recessional moraine  
roche moutonnée  
terminal moraine  
till-floored lake plain  
till plain (also Landscape)  
tunnel valley  
tunnel-valley lake (water body)  
valley train

### Microfeatures:

swale

## Region 11 Technical Note – Geomorphic Terms

**PERIGLACIAL** - related to non-glacial, cold climate (modern or relict), including periglacial forms of patterned ground. Note: consider "patterned ground" as a Landform, but treat specific types of patterned ground, singular or plural, as Microfeatures.

Landforms:

patterned ground (see Microfeatures for types)

Microfeatures:

ice wedge polygons

**MASS MOVEMENT (MASS WASTING)** - dominated by gravity, including creep forms.

Landscapes: these generic Landscapes are not Mass Movement features per say, but are commonly modified by, and include localized areas of, Mass Movement.

hills

Landforms:

landslide

slump

**TECTONIC and STRUCTURAL** - related to regional or local bedrock structures, or crustal movement. In Soil Survey, tectonic and structural features are only recognized if they have some expression at or near the land surface.

Landscapes:

hills

Landforms:

structural bench

Microfeatures:

sand boil

**SLOPE** - generic terms or those that describe slope form, geometry, or arrangement of land features, rather than any particular genesis or process.

Landscapes:

hills

Landforms:

bluff

broad interstream divide

cliff

escarpment

free face (also Geom Comp. – Hills)

hill (plural = Landscape)

hillslope

interfluvium (also Geom. Comp.- Hills)

knob

knoll

paha

plain (plural = Landscape)

ridge

scarp

## Region 11 Technical Note – Geomorphic Terms

**EROSIONAL** – related dominantly to water erosion but excluding perennial, channel flow (i.e. fluvial, glaciofluvial), or eolian erosion.

### Landscapes:

hills

### Landforms:

free face (also Geom. Comp. – Hills  
monadnock

paha  
structural bench

### Microfeatures:

swale

**DEPRESSIONAL** - low area or declivity features, excluding permanent water bodies.

### Landforms:

alluvial flat  
closed depression (also Micro.)  
depression  
drainageway  
kettle

open depression (also Microfeature)  
pothole (intermittent water; also  
Landform)  
ravine  
swale

### Microfeatures:

closed depression (also Landform)  
open depression (also Landform)

pothole (inter. water; also Landform)  
tree-tip pit

**WETLANDS** - Related to vegetated and / or shallow wet areas, and wet soils. Provisional list: conventional, geologic definitions; not legalistic or regulatory usage.

Landscapes: generally, there is no appropriate Landscape term for wetlands; by default, choose the most appropriate Landscape term from another Process Environment or Other Grouping

### Landforms:

backswamp  
bog  
fen  
marsh  
mud flat

oxbow lake (ephemeral water)  
pothole (intermittent water)  
slough (intermittent water)  
swamp

## Region 11 Technical Note – Geomorphic Terms

**WATER BODIES** - Discrete "surface water" features, primarily permanent open water, which in Soil Survey Reports are commonly treated as the generic map unit "water" (e.g. lake), or as a spot / line symbol (e.g., perennial stream).

### Landforms:

glacial lake	river
ice-marginal stream	slackwater
lake	slough (permanent water)
oxbow lake	stream (permanent water)
pothole (lake) (also Micro.)	tunnel-valley lake

**SUBAQUEOUS FEATURES** - Discrete, relatively shallow underwater features that commonly can support rooted plants, and adjacent features, ordinarily found below permanent open water. Historically, in Soil Survey Reports these underwater features have been included in the generic map unit "water".

### Landforms:

TBD

### Microfeatures:

TBD

## Region 11 Technical Note – Geomorphic Terms

### List of Materials or Material-Related, Structure, or Morphological-Feature Terms Contained in the Glossary.

ablation till	melt-out till
alluvium	metamorphic rock
backswamp deposit	mine spoil, coal extraction
basal till	mine spoil, metal-ore extraction
beach sands	mine spoil or earthy fill
bedding plane	moraine
bedrock	moss peat
buried soil	muck
chert	mucky peat
colluvium	outcrop
conglomerate	outwash
coprogenous earth	overburden
coprogenous material	paleosol
diamicton	peat
diatomaceous earth	pedis sediment
discontinuity	pitted outwash
dolomite (mineral)	regolith
dolomite (rock)	relict soil
dolostone - NR	residuum
dredge spoils	sandstone
drift (glacial geology)	sediment
eolian deposit	sedimentary peat
erratic	sedimentary rock
fill	shale
fly ash	siltstone
flowtill	slip face
formation (stratigraphy)	slope alluvium
glaciofluvial deposits	spoil bank
glaciolacustrine deposits	spoil pile
herbaceous peat	stone line
igneous rock	subglacial till
interbedded	subglacial melt-out till
lacustrine deposit	supraglacial till
lamella	till (glacial)
limestone	valley fill
lithologic	valley side alluvium
lodgment till	varve
loess	welded soil
marl	woody peat

### Genesis - Process Terms and Geologic Time Terms Contained in the Glossary.

accretion	glacial
aggradation	glaciation
alluvial	Holocene
buried	mass movement
colluvial	pedoturbation
constructional (geomorphology)	Pleistocene
creep	Quaternary
cut and fill	recent
degradation	relict
deposition	scour
destructional (geomorphology)	slope wash
discontinuity	stratified
eolian	stratigraphy
erosion	subglacial
erosional (geomorphology)	Tertiary
fluvial	weathering
geomorphology	welding